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Rectifier		Filter circuit	Output		Maximum-load current	D-c power maximum output	Shunt capacitance
Circuit	Type		No-load	Maximum-load			
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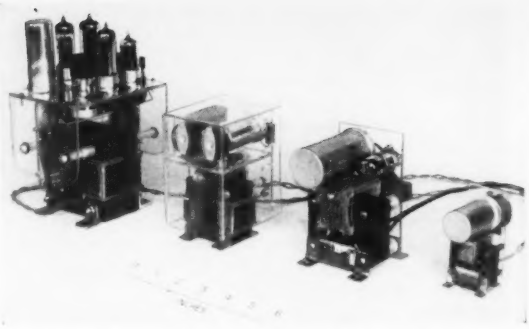
Fullwave	6X4	Electronically regulated	160 200	156 199	30 20	4.7	18.0

supply is designed. The capacitance reduction is accomplished by inserting an air gap between the core and the one or more secondary windings of the power transformer, and by compactly mounting the entire secondary circuit on an insulated chassis. Typical capacitance values obtained with this design range from 8 to 18 micromicrofarads and are comparable to the stray shunting capacitances of equivalent batteries. With moderately low driving impedance, this amount of capacitance has no appreciable effect at frequencies below several megacycles.

To reduce magnetic leakage resulting from the isolating air gap in the transformer and thereby improve the voltage regulation, a split primary winding is usually employed, one-half on each side of the secondary winding. The voltage regulation is further improved in a 200-volt 20-ma model of the supply by use of electronic stabilization: in this model the output voltage varies approximately 1 percent from no load to full load, and over a reasonable range of line voltages.

An added advantage of the NBS low-capacitance power supply over batteries is that the output voltage of the former can be varied easily and continuously. This is accomplished conventionally, either by an internal potentiometer in the case of the electronically regulated model or, with the other models, by an external variable-voltage transformer.



Several low-capacitance power supplies developed by the Bureau. The model at left employs electronic regulation.

The special power supply is particularly useful in the laboratory as a means for easily determining the proper operating voltages for experimental circuits. In addition to the direct-coupling application, for which it is uniquely suited, it may also be used in circuits in which one terminal is grounded, though it offers no advantages when used in such conventional applications.

For further technical details, see Bias supplies for direct coupled circuits, *by J. H. Reaves, Electronics,* **27**, *8 (August 1954).*

Motion Picture Film Wins Prize

THE MOTION PICTURE, *Hazards of Dental Radiography*, produced in 1953 by the National Bureau of Standards and the American Dental Association, has been awarded second price in the Medical Category at the XV International Exhibition of Cinematographic Art held at Venice, Italy, July 6–16. The film was also chosen for exhibition to special medical groups at the Eighth International Edinburgh Film Festival at Edinburgh, Scotland, August 22–September 12, 1954.

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Arrangements for loan of this 13-minute, 16-mm, sound color film may be made by writing the Office of Scientific Publications, National Bureau of Standards, Washington 25, D. C., or the American Dental Association, Film Library, 222 East Superior Street, Chicago 11, Illinois. Arrangement for purchase may be made by writing the Office of Scientific Publications, National Bureau of Standards, Washington 25, D. C.

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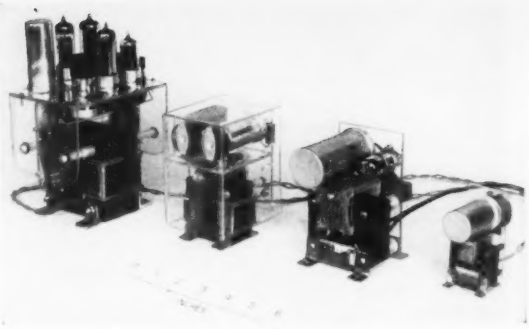

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